Gezira Journal Of Health Sciences 2011 vol.7(2)

EDITORIAL

Is Dental Interventions Safe During Pregnancy?

Mogahid Abderahman[1] BDS, DPH, DGZI , MDPH , MSOSI , Ph.D

Mohamed Elsanousi Mohamed [2], *MGO, JMHPE*

1. Assistant professor dental public health. Deputy Dean Faculty of Dentistry, University of Gezira, Sudan.
Director General, Gezira Dentistry Hospital,
2. Professor of Obstetrics & Gynaecology, Faculty of Medicine, Postgraduate coordinator EDC Gezira, University of Gezira, Sudan.

Corresponding author
Dr. Mogahid Abderahman
Deputy Dean Faculty of Dentistry, University of Gezira, Sudan.
e mail mogahid 77@yahoo.com

ABSTRACT

Objectives*:* To investigate the safety of tooth extraction and other dental interventions during pregnancy.
Methods: pregnant ladies with dental problems were seen by an obstetrician and a dentist. Simple cases were treated medically. Severe cases were identified. When surgical intervention was indicated due to abscess formation or disturbance of sleep, patient consent was taken and the necessary treatment was performed. A contact number was given to each patient and there addresses were taken. All treated patient were asked to report seven days latter for follow up of the dental condition and the pregnancy wellbeing.
Results: This study involved 97 pregnant ladies, in different gestational ages, 50.5% of them were in the first trimester. Patients from urban area were 65.9%. The population of this study included patients with pregnancy order up to 8 however 23.7% of them were primigravidae. Some of these ladies (30.0%) gave past history of previous pregnancy complications. Each patient presented with more than two symptoms of the following: pain, disturbance of sleep, difficulty in food chewing, bleeding from the gum and earache. All patients had clinical evidence of infection either pulpitis, gingivitis or both. The main underlining problem of these participants was tooth caries. The surgical dental interventions included; tooth extraction, scaling, filing and root canal treatment.
Conclusion The dental intervention during pregnancy using local anaesthesia is safe. The severe pain, difficulty of feeding and disturbance to sleep due oral/dental diseases may cause more danger to mother and her fetus than dental intervention.

Keywords: dental, pregnancy, extraction, intervention.

INTRODUCTION

Pregnancy has got physiological effects on almost all maternal systems. Teeth are affected possibly through effects in calcium metabolism. Maternal and fetal complications and greater morbidity are more likely to happen during dental care. [1] There are irrational fears of any sort of dental treatment during

pregnancy among the community. Interestingly enough that they involve the pregnant lady and her family and sometimes extend to the treating obstetricians and dentists. There is a conflicting situation between the option of carrying on the dental treatment in spite of its assumed effects on the foetus and deferring it; leaving the patient to suffer the consequences of pain, interference with feeding, infection and disturbance of sleep. This is not the end of it because maternal periodontitis and chronic gingivitis are associated by foetal problems like preterm labour [2, 3]. Untreated or inadequately treated periodontal disease is among the risk factors of stillbirth.[4, 5] This justifies a study that gives more confidence about the safety of dental interventions during the different trimesters of pregnancy. Specially one may argue that the effects of dental problems are threatening the maternal and foetal wellbeing.

METHODS

This was a prospective interventional study, carried out in Wadmedani town in the central Sudan. Patients were pregnant women at different gestational age in all the three trimesters, presented with dental problems. Each patient was seen by the obstetrician and the dentist. Detailed history was taken and through medical, obstetrical and dental examination was performed. Simple cases were treated medically by antibiotics and analgesics. The antibiotics used were of the Penicillin group in most cases. Surgical treatments were indicated by failure of the initial remedy or when there was sever pain and or disturbance of sleep. Surgical treatment was in form of filing, scaling, root canal surgery or tooth extraction. Lignocain 2% with adrenaline 1:100.000 was used for local anaesthesia in a dose 1.8 to 3.6 ml (1- 2 carpules of local aneasthesia) by local infiltration. All patients were asked to report back for follow up one week after the intervention or immediately in case of occurrence of any problem concerning the teeth or the pregnancy. A contact telephone number was given to each patient to facilitate communication when needed.

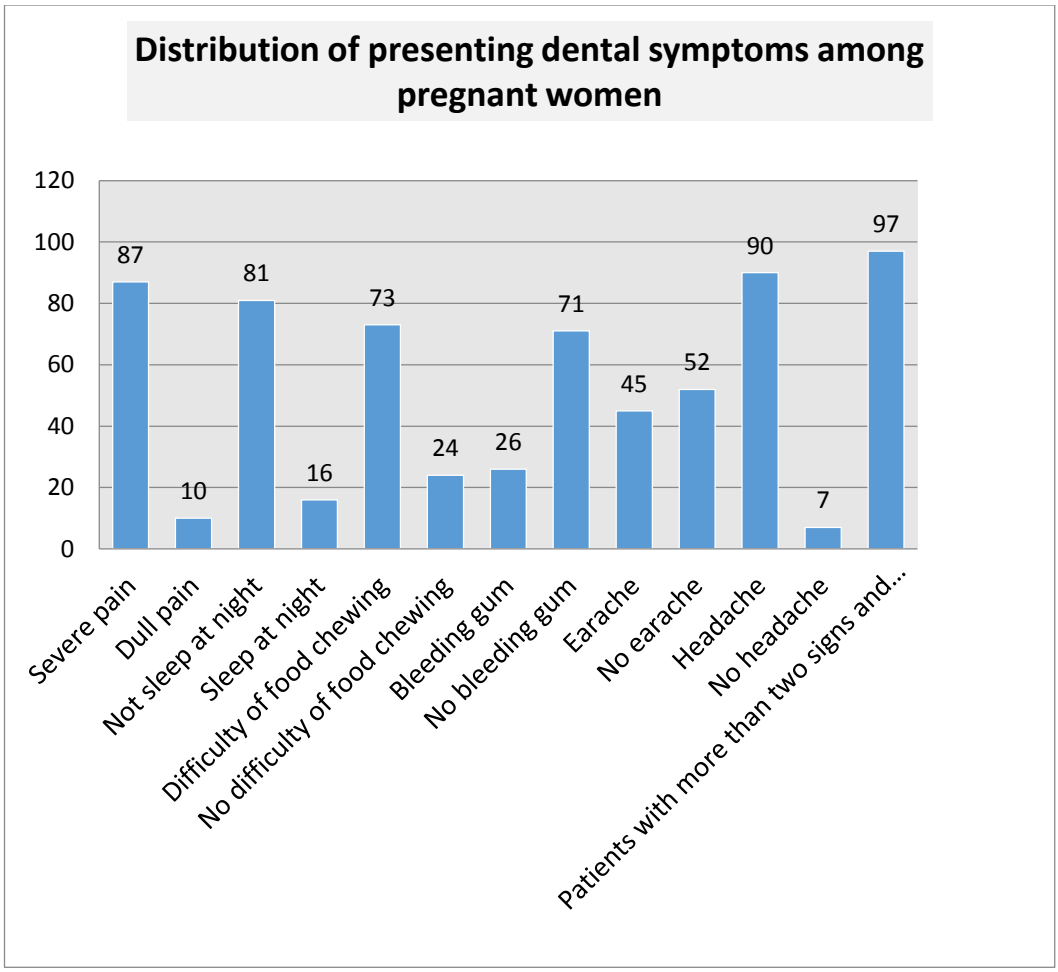
RESULTS

The total number of patients enrolled in this study was 97.Most of from (64 patients, that was 67.0%) were from urban regions. All of they were pregnant ladies in the first, second and third trimesters: 49(50.5%), 25(25.7%) and 23(23.7%) respectively. According to parity 23 patients (23.7%) were seen during their first pregnancy, 18 (18.6%) during their second, 16 (16.5%) during their third, 19 (19.6%) during their forth where as 21 (21.7%) of the patients were having more than four parities. Regarding the past history 29 (29.6%) of the patients, admitted to have previous obstetrical problems, end in loss of the baby, as abortion, preterm labour or stillbirth. All the patients seen were presented by more than one symptom. However the most frequent symptom was headache (91%) followed by severe pain (87%), then

EDITORIAL

disturbance of sleep, feeding difficulty, earache and bleeding gums (81%, 73%, 45% and 26% respectively), see *figure (1).*

Figure (1) Distribution of presenting dental symptoms among pregnant women.



The dental diagnosis of the patients was either dental carries (with pulpitis or periepical lesion) and gingivitis and periodontitis. As *table (1)* shows: 57 patients (58.8%) were diagnosed as periepical lesion, 16 (16.5%) as pulpitis and 24 (24.7%) as gingivitis & periodontitis. *Table (1)* also shows cross tabulation of the dental diagnosis and the residence (urban and rural) of the patients.

Table (1): Showing distribution of dental problems during pregnancy and residence in the studied population

Site	Peripheral lesion		Pulpitis		Gingivitis & periodontitis		Total
	N	%	N	%	N	%	
Urban	38	66.7	10	52.5	10	41.7	58
Rural	19	33.3	6	37.5	14	58.3	39
Total	57	100	16	100	24	100	97

EDITORIAL

Dental interventions in this study were as follows: 60 patients (61.8%) were treated by tooth extraction, 18 (18.6%) had scaling, 15 (15.5%) were treated by filling and 4 (4.1%) had root canal treatment. *Table (2)*. Local anaesthesia was used for the treatment of 85 (87.6%) whereas in 12 (12.4%) patients were treated without anaesthesia. None of those patients was treated under general anaesthesia.

Table (2): Shows distribution of studied pregnant women by different types of dental surgical intervention used

Type of treatment	Number	Percent (%)
Tooth Extraction	**60**	**61.8%**
Scaling	**18**	**18.6%**
Filling	**15**	**15.5%**
Root canal treatment	**4**	**4.1%**
Total	**97**	**100%**

The outcome of treatment was without troubles in 90 (92.8%) of patients. The rest were complicated, 4 (4.1%) by increased swelling of the cheek and 3 (3.1%) by dry socket osteositis with infected alveolar bone. None of the treated patients showed an obstetrical complication for the mother or the baby.

DISCUSSION:

The mouth represents the main portal of entry to the body. Oral health tells about the general health and well being of an individual, especially during pregnancy. That is why obstetricians and midwives are very much concerned by examination of the mouth of their patients. Dental disease affect pregnancy and pregnancy has proved effects on teeth and gums. Maternal periodontal disease, that is a chronic infection of the gingiva and supporting tooth structures, has been associated with preterm birth, development of preeclampsia, and delivery of a small for- gestational age infant [2] in addition to the log remote serious effects on other body systems. [6, 7] Treatment of oral health conditions during pregnancy is considered as a mechanism to improve women's oral and general health, also the pregnancy outcomes and children's dental health.[8] Spontaneous abortion (miscarriage), occurs in more than 15% of all pregnancies .The majority of which are caused by intrinsic foetal abnormality. Therefore it is most unlikely that any dental procedure would be implicated in spontaneous abortion. In fact febrile illnesses and sepsis can precipitate a

miscarriage, therefore prompt treatment of odontogenic infection and periodontitis is advised. [9] Periodontal disease, including gingivitis and periodontitis, is one of the most common chronic disorders of infectious origin known in humans, with a reported prevalence varying between 10 and 60% in adults, depending on diagnostic criteria. Periodontal disease is initiated by overgrowth of certain bacterial species, with a majority of Gram-negative, anaerobic bacteria growing in sub gingival sites and producing lipo-polysaccharide (LPS) endotoxins and other bacterial substances. The host response to periodontal pathogens causes persistent inflammation with high levels of pro-inflammatory cytokines, contributing locally to periodontal disease as well as to systemic effects including increased risk of atherosclerosis, myocardial infarction, stroke, and diabetes mellitus. Several studies have highlighted the relationship between maternal periodontal disease and birth outcomes; including prematurity, but did elucidate a significant correlation between poorer periodontal health and those that experienced a late miscarriage.[10] This strongly support and justify dental interventions during pregnancy in the patients presented in this study. The science supporting interventions before, during, and after pregnancy to reduce caries transmission is much stronger. Educational and behavioural interventions that reduce caries activity through appropriate use of fluorides, dietary guidelines, chlorhexidine gels and varnishes, and xylitol. [11]

Dental disease during pregnancy might be troublesome. Patients usually present with more than one symptom. This partially indicates a somehow late seeking medical advice. A survey carried in the United State showed that most women did not visit the dentist during pregnancy; half of these women believed that poor oral health during pregnancy was normal or they feared dental treatments could harm the foetus, so they did not seek care. Interestingly enough that 49% of obstetricians rarely or never recommend a dental examination; only 10% of dentists perform all necessary treatments and 14% of dentists are against using local anaesthetics during pregnancy.[12, 13]

Dental interventions during pregnancy are generally safe. Many studies supported this. It has been documented that different modalities of dental treatments including routine cleanings, fillings, crowns, extractions, gum treatment, and continuation of orthodontic treatment can all be provided.[14] The outcome was shown to be safe for mothers and babies. In spite of the that local anaesthetics are known to cross the placenta, but it is safe in dental treatments, because they are used locally and in small doses.[14] It can only elevate the mother's blood pressure. [15] More over Jeffcoat et al. demonstrated that among women at high risk for preterm birth and presence of periodontal disease, scaling and root planning therapy initiated during pregnancy is tolerated by pregnant women and may reduce spontaneous preterm birth.[16] Preterm/low birth weight rate was lower among women who received periodontal treatment compared to those who did not (13.5% vs. 18.9%). [17]

Antibiotics that are acceptable include penicillin, amoxicillin, and clindamycin. Tetracycline should be avoided since it tends to cause permanent discoloration of primary and temporary dentition of the unborn child.[18] Non steroidal anti-inflammatory drugs was used in this study without additional harm to the pregnant mothers or their babies. Some studied disagree with that where it is generally accepted in attempt to decrease dental pain, narcotics should be avoided as well as over the counter medications such as aspirin, ibuprofen, and related products because of the potential to affect bleeding. Morphine appears to be a safe analgesic when administered for short periods of time.[14]

There is published work that showed interventions for prevention and treatment of dental caries and periodontitis or using local anaesthetics during pregnancy have not been found to be harmful to the developing foetus. Surprising enough pregnancy complications, such as low birth weight, prematurity and even preeclampsia, are shown to complicate women who have not received treatment. Furthermore, amalgams or dental x-ray scans during pregnancy has not been shown to adversely affect the baby. Good oral health during pregnancy is important to the overall health of both expectant mothers and their babies.[19]

CONCLUSION:

Dental interventions during pregnancy is safe in all trimesters and for ladies with any birth orders whether primigravidae or multigravidae.

RECOMMENDATIONS

Establishing of proper health education programme to raise level of awareness of pregnant women, husbands, parents, medical staff and population about the importance and safety of dental care during pregnancy.

REFERENCES

1. Crispian Scully and Roderick. A. Cawson. Women Health Pregnancy. Medical Problems in Dentistry. Fifth edition, 2005.Page: 490.
2. Offenbacher S, Katz V, Fertik G, Collins J, Boyd D, Maynor G, et al. Periodontal infection as a possible risk factor for preterm low birth weight. *J Periodontol*. 1996; 67:1103 –13.

3. Jeffcoat MK, Geurs NC, Reddy MS, Cliver SP, Goldenerg RL, Hauth JC. Periodontal infection and preterm birth: results of a prospective study. *J Am Dent Assoc.* 2001; 132: 875 – 80
4. Lawn JE, Yakoob MY, Haws RA, Soomro T, Darmstadt GL, Bhutta ZA: 3.2 million stillbirths: epidemiology and overview of the evidence review. BMC Pregnancy and Childbirth 2009, 9(Suppl 1):S2

5. Esme V Menezes, Mohammad Yawar Yakoob, Tanya Soomro, Rachel A Haws, Gary L Darmstadt and Zulfiqar A Bhutta Reducing stillbirths. Prevention and Management of Medical Disorders and Infections

EDITORIAL

During Pregnancy. BMC *Pregnancy and Childbirth*; 2009, 9 (Suppl 1): S4 doi:10.1186/1471-2393-9-S1-S4(2)
6. Mercado F, Marshall RI, Klestov AC, Bartold PM. Is there a relationship between rheumatoid arthritis and periodontal disease? *J Clin Periodontol*. 2000; 27: 267–72.
7. Thorstensson H, Kuylenstierna J, Hugoson A. Medical status and complications in relation to periodontal disease experience in insulin-dependent diabetics. *J Clin Periodontol*. 1996; 23: 194–202.
8. Kim A. Boggess · Burton L. Edelstein: Oral Health in Women During Preconception and Pregnancy. Implications for Birth Outcomes and Infant Oral Health. *Matern Child Health J*. 2006; 10:S169–S174
9. AMES.W Donald, A Craig, S Nelson L. Pregnancy and breast feeding. Physiology and complication. Dental Management of the medically Compromised Patient. Sixth edition. Mosbey, 2000 Page: 304 – 305.
10. Xiong et al. 2006: impact of periodontal disease on stillbirths and perinatal mortality [http://www.biomedcentral.com/content/supplementary/1471- 2393-9-S1-S4-S30.doc]
11. Gussy MG, Waters EG, Walsh O, Kilpatrick NM. Early childhood caries: current evidence for aetiology and prevention. *J Paediatr Child Health*. 2006; 42: 37–43.
12. Michalowicz BS, DiAngelis AJ, Novak MJ, Buchanan W, Papapanou PN, Mitchell DA, et al. Examining the safety of dental treatment in pregnant women. *J Am Dent Asso.c* 2008; 139(6): 685-95.
13. Pistorius J, Kraft J, Willershausen B. Dental treatment concepts for pregnant patients—results of a survey. *Eur J Med Res*. 2003; 8(6): 241-6.
14. Turner M, Aziz SR. Management of the pregnant oral and maxillofacial surgery patient. *Journal of Oral and Maxillofacial Surgery*. 2002; 60(12): 1479–1488.
15. Stanley.F.Malamed.Food and drug administration in pregnancy categories Local Anaesthesia. Fifth edition. Mosbey 2004; Page 146
16. Jeffcoat MK, Hauth JC, Geurs NC, Reddy MS, Cliver SP, Hodgkins PM, et al. Periodontal disease and preterm birth: results of a pilot intervention study. *J Periodontol*. 2003; 74: 1214–8.
17. Mitchell-Lewis D, Engebretson SP, Chen J, Lamster IB, Papapanou PN. Periodontal infections and pre-term birth: early findings from a cohort of young minority women in New York. *Eur J Oral Sci*. 2001; 109: 34–9..
18. Lawrenz DR, Whitley BD, Helfrick JF. Considerations in the management of maxillofacial infections in the pregnant patient. *Journal of Oral and Maxillofacial Surgery*. 1996; 54(4): 474–485.
19. Haas DA. An update on local anesthetics in dentistry. *J Can Dent Assoc* 2002; 68(9): 546-51.

.